

A photograph showing a dense field of tall grasses, some green and some brown, heavily covered with a thick layer of white, spherical hailstones. The hailstones are of various sizes, mostly between 1 and 2 centimeters in diameter. The background is a solid blue banner.

# ***War on Hail: The Impact of Hail***

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# IBHS Field Research Objectives

- **Deploy instruments to measure hailstone characteristics**
- **Collect damage data after the event—compare with insurance claims data for select events**
- **Provide baseline to compare field damage to damage simulated in the test chamber and small laboratory**



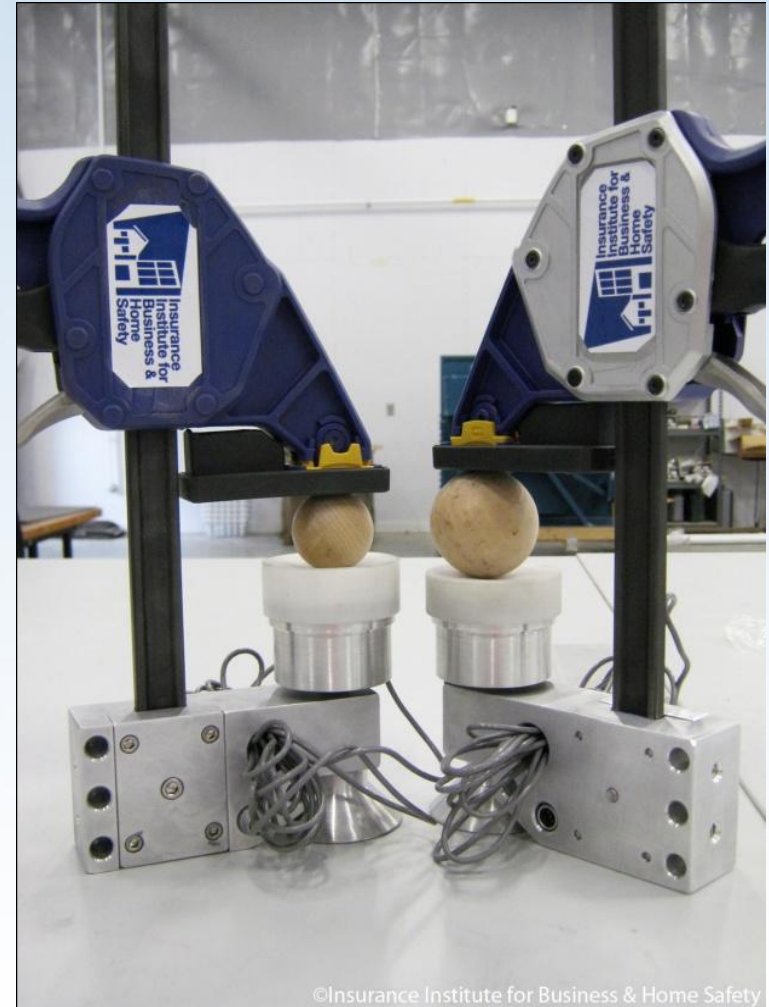
# **IBHS Field Research in 2012: Hailstone Characteristics**

- **Collect scientific information on the properties of severe hailstones:**
  - 1) **Size**
  - 2) **Mass**
  - 3) **Hardness**
- **May 25 – June 8, 2012**
- **Coordinated field deployment**
- **Project domain: Northern, Central and Southern Plains**



# IBHS Field Research in 2012: Hailstone Characteristics

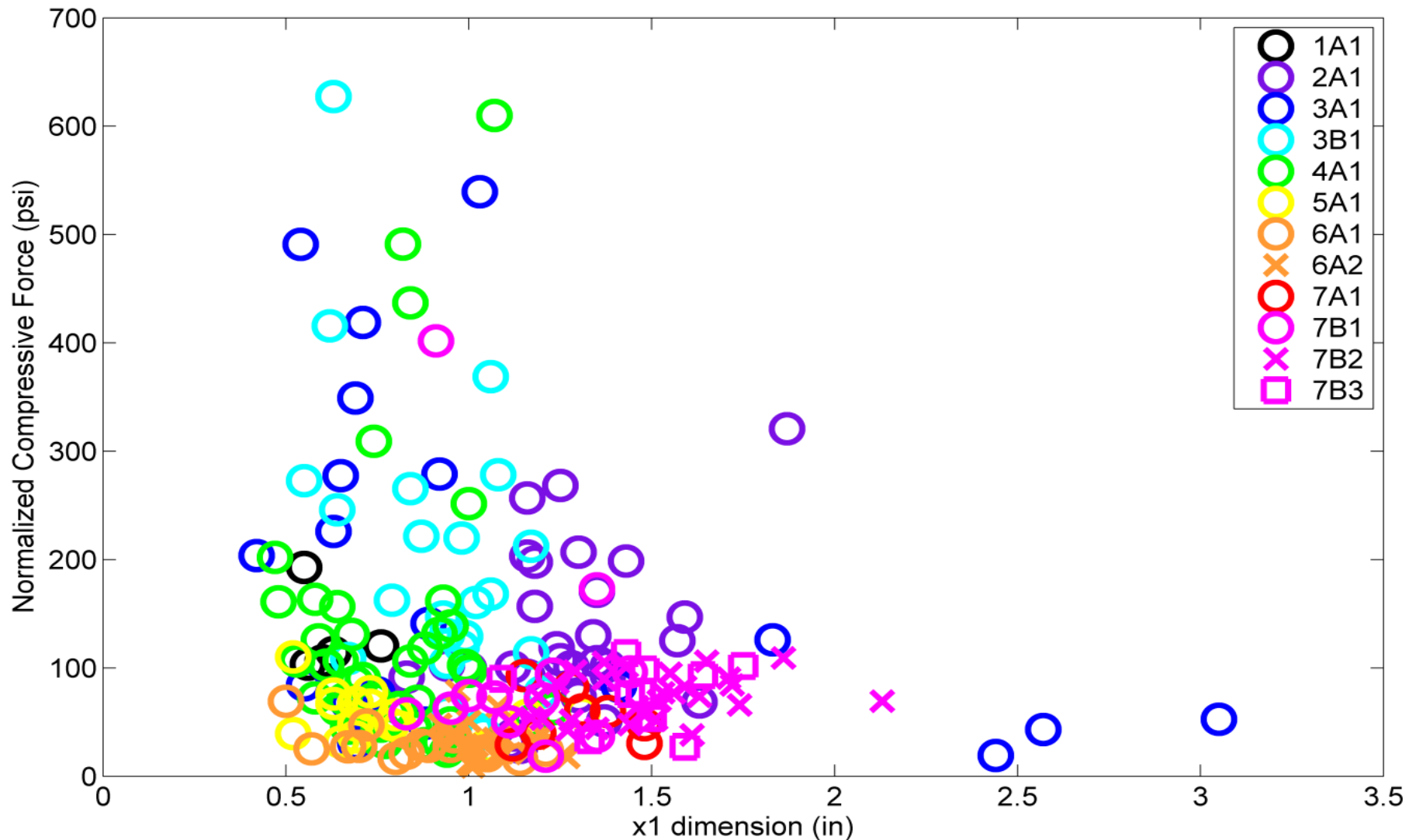
- 15 datasets
  - 9 different storms
  - 7 different days
  - 5 different states
  - 3 dual-polarization radar cases
- Size range: 0.16-3.05"
- Mass range: 0.5-125 g
- Normalized hardness range:  
9-620 psi



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# IBHS Field Research in 2012: Hailstone Characteristics

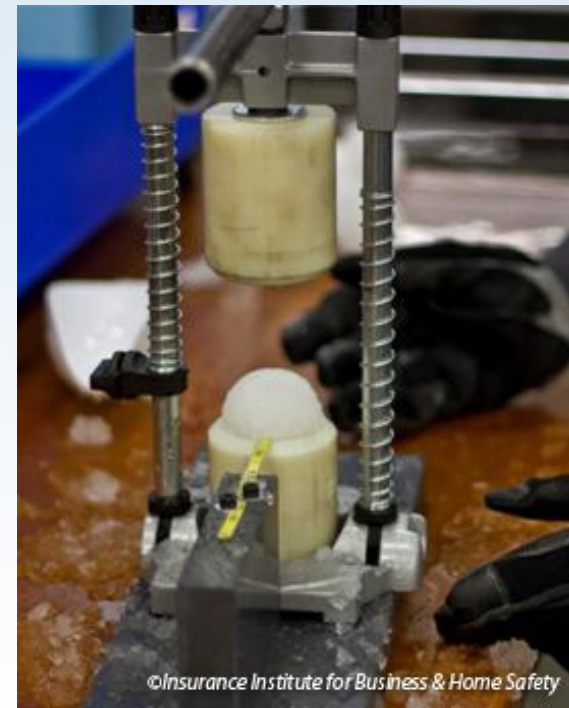


# IBHS Lab Research: Making Artificial Hailstones

**Chemical—Tap Water, Distilled Water, Seltzer Water**



**Physical—Compacted Crushed Ice**





# IBHS Lab Research: Making Artificial Hailstones

## Density

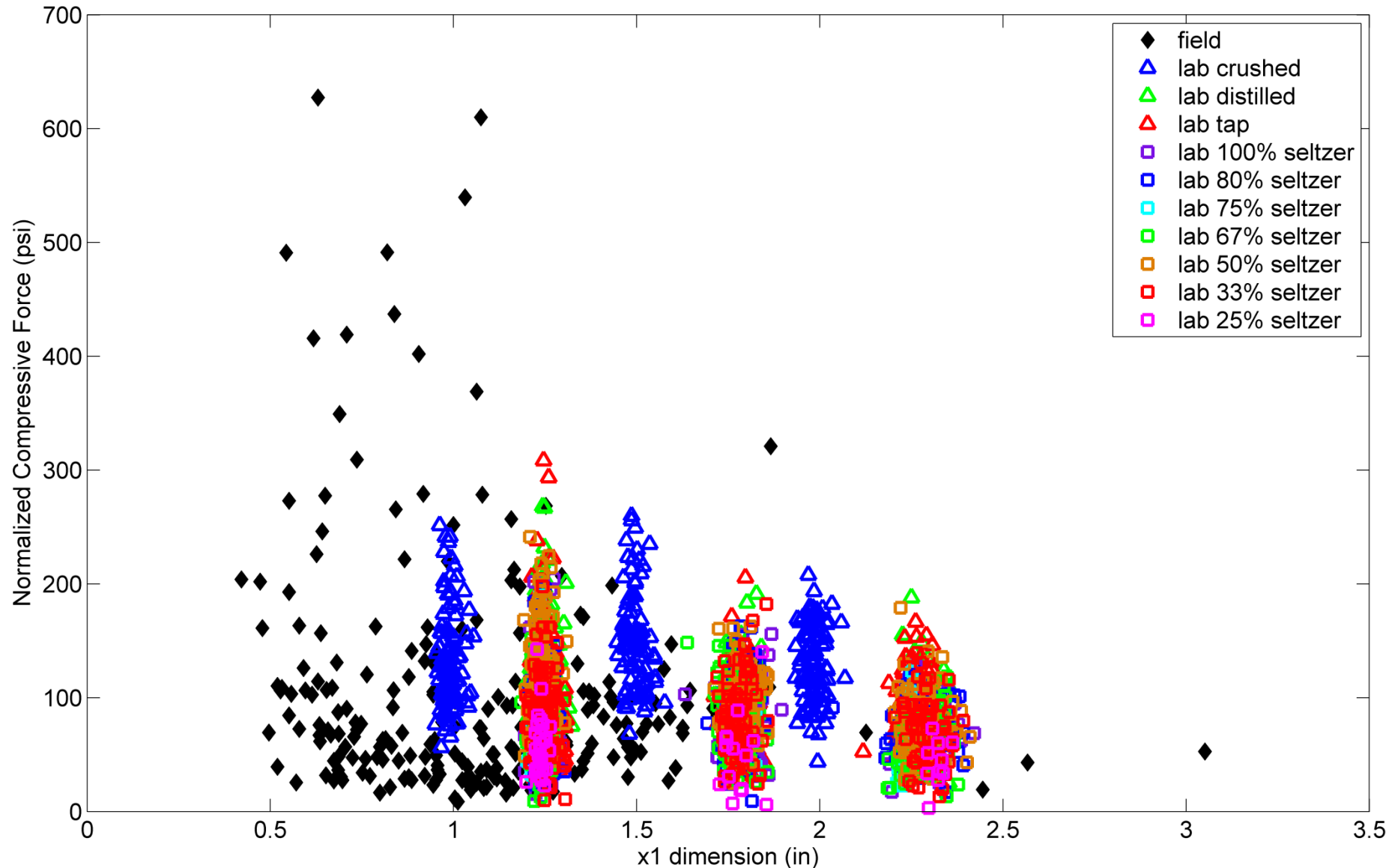
- **Artificial Hailstones: 0.45-1.1 g/cm<sup>3</sup>**
- **Natural Hailstones: 0.1-0.9 g/cm<sup>3</sup>**

## Hardness

- **Artificial Hailstones: 3-308 psi**
- **Natural Hailstones: 9-620 psi**



# IBHS Lab Research: Making Artificial Hailstones



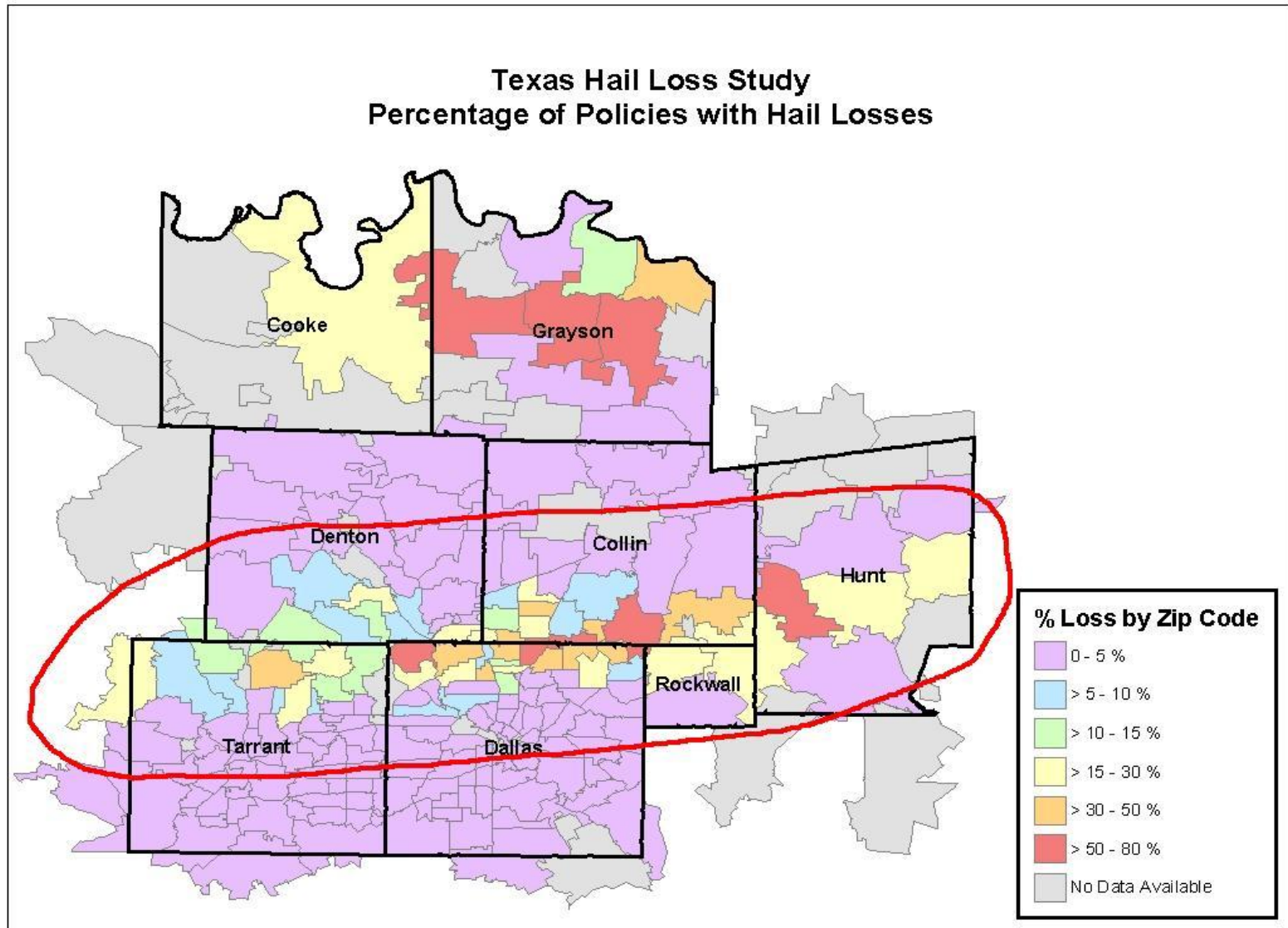


# **IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm**

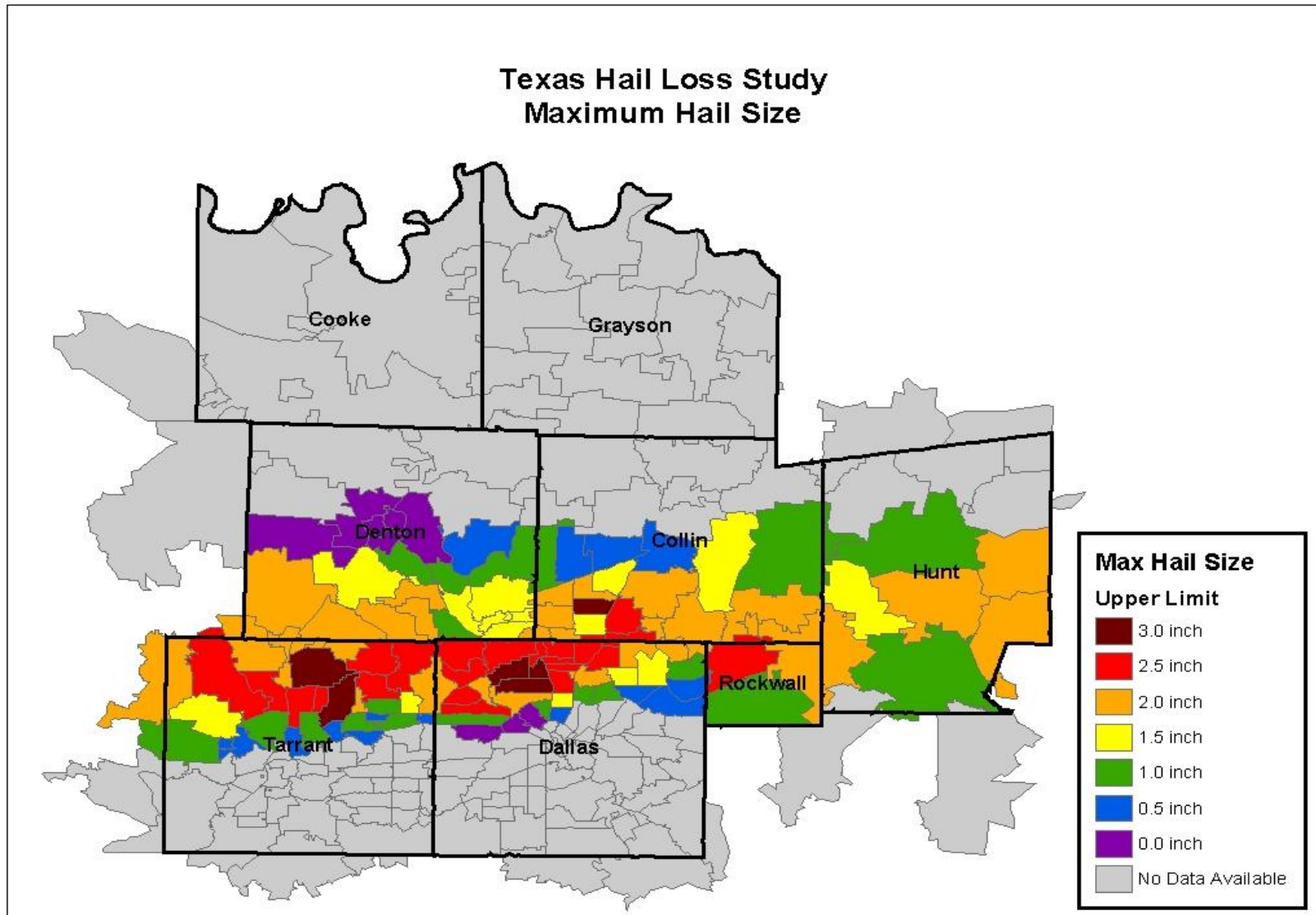
- **April 5**
- **Hail size over 3” in diameter**
- **\$885 million in insured losses, predominately from hail**
- **Dataset of nearly 320,000 single-family home policies from 3 companies**
  - Zip code
  - Type of roof covering
  - Deductable
  - Coverage A limit ranges
  - Qualification of TDI discount for IR roof
  - Claim payout ranges



# IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm



# IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm





# **IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm**

## **Total Dataset**

- **24% policies had claims**
- **19% policies had claims paid**
- **Total claims payout of \$326 million (0.64% of Insured value)**

## **IR Roofs**

- **Over 1,800 IR roofs**
  - **56% asphalt shingles**
  - **37% metal**
- **14% policies had claims**
- **9% policies had claims paid**



# **IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm**

## **Asphalt shingles**

- **99.65% non-IR**
- **\$5,200 average damage**
- **3.1% damage-to-coverage ratio**

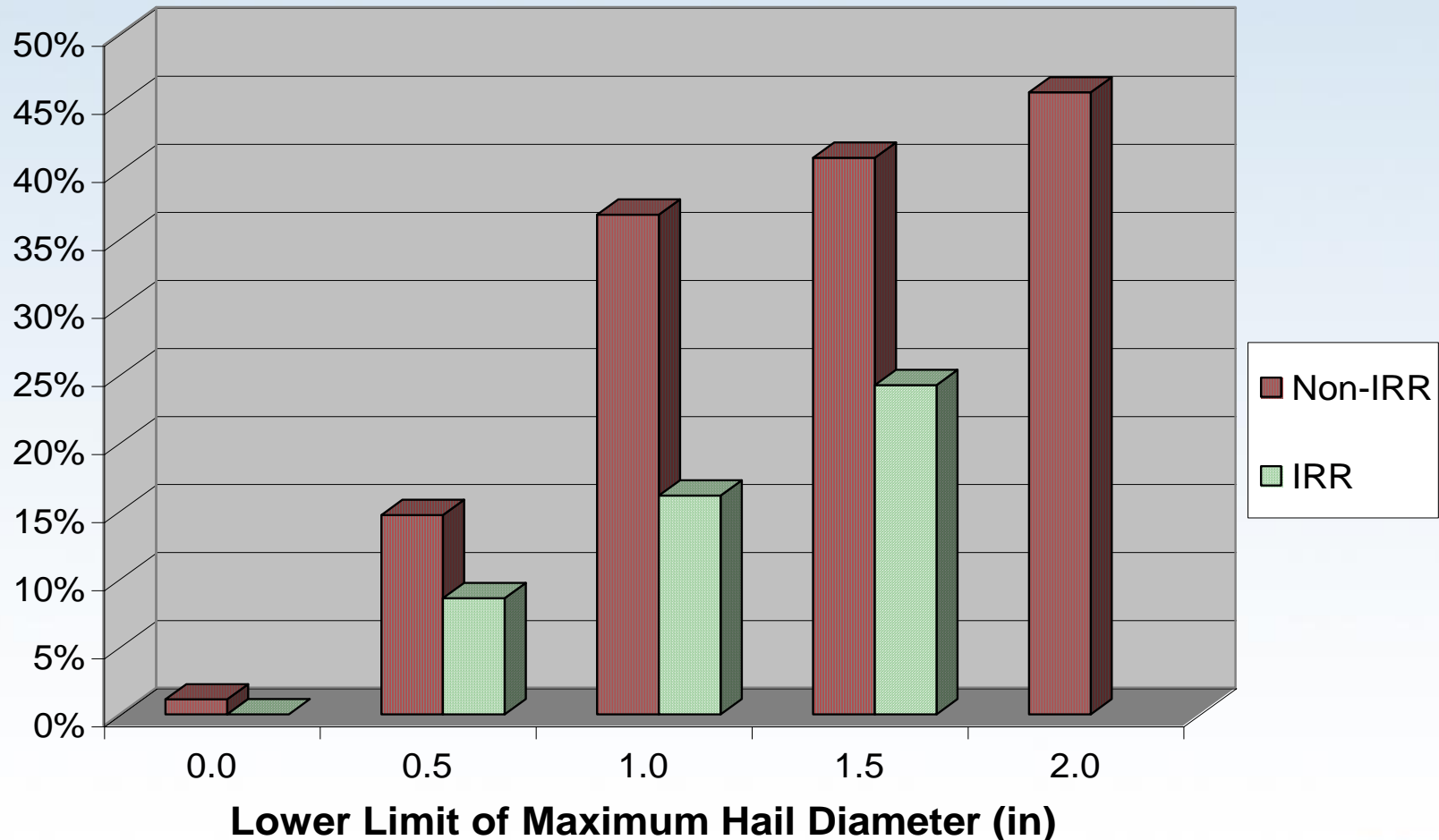
## **Asphalt IR Shingles**

- **0.35% IR**
- **\$4,400 average damage**
- **1.9% damage-to-coverage ratio**



# IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm

**Percent of Policies with Losses (Indemnity Paid > \$1)**





# **IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm**

## **Metal Roofs**

- **69% non-IR**
- **\$11,000 average damage**
- **11% damage-to-coverage ratio**

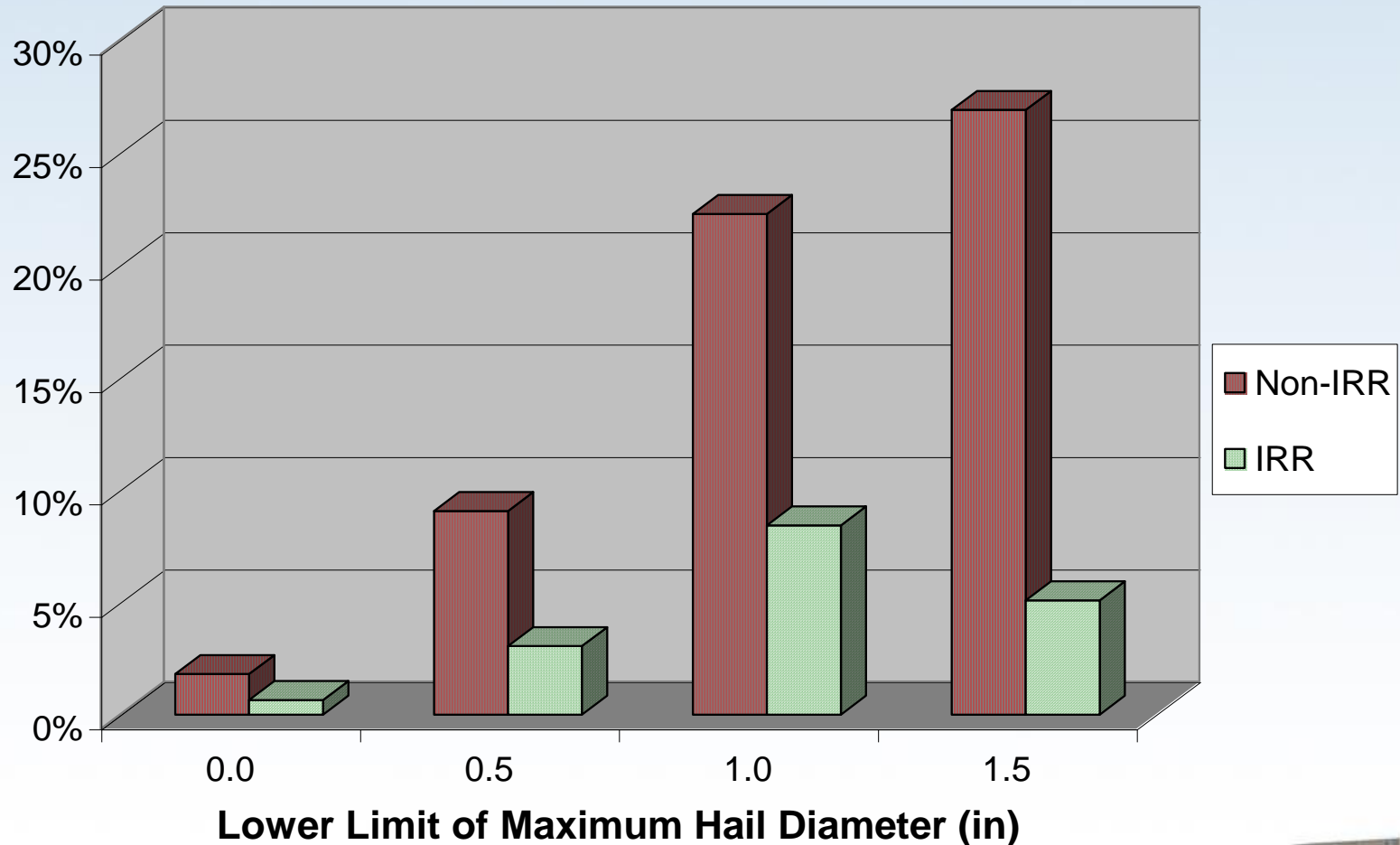
## **Metal IR Roofs**

- **31% IR**
- **\$21,000 average damage**
- **5.8% damage-to-coverage ratio**



# IBHS Claims Study: 2003 Dallas-Fort Worth Hailstorm

**Percent of Policies with Losses (Indemnity Paid > \$1)**



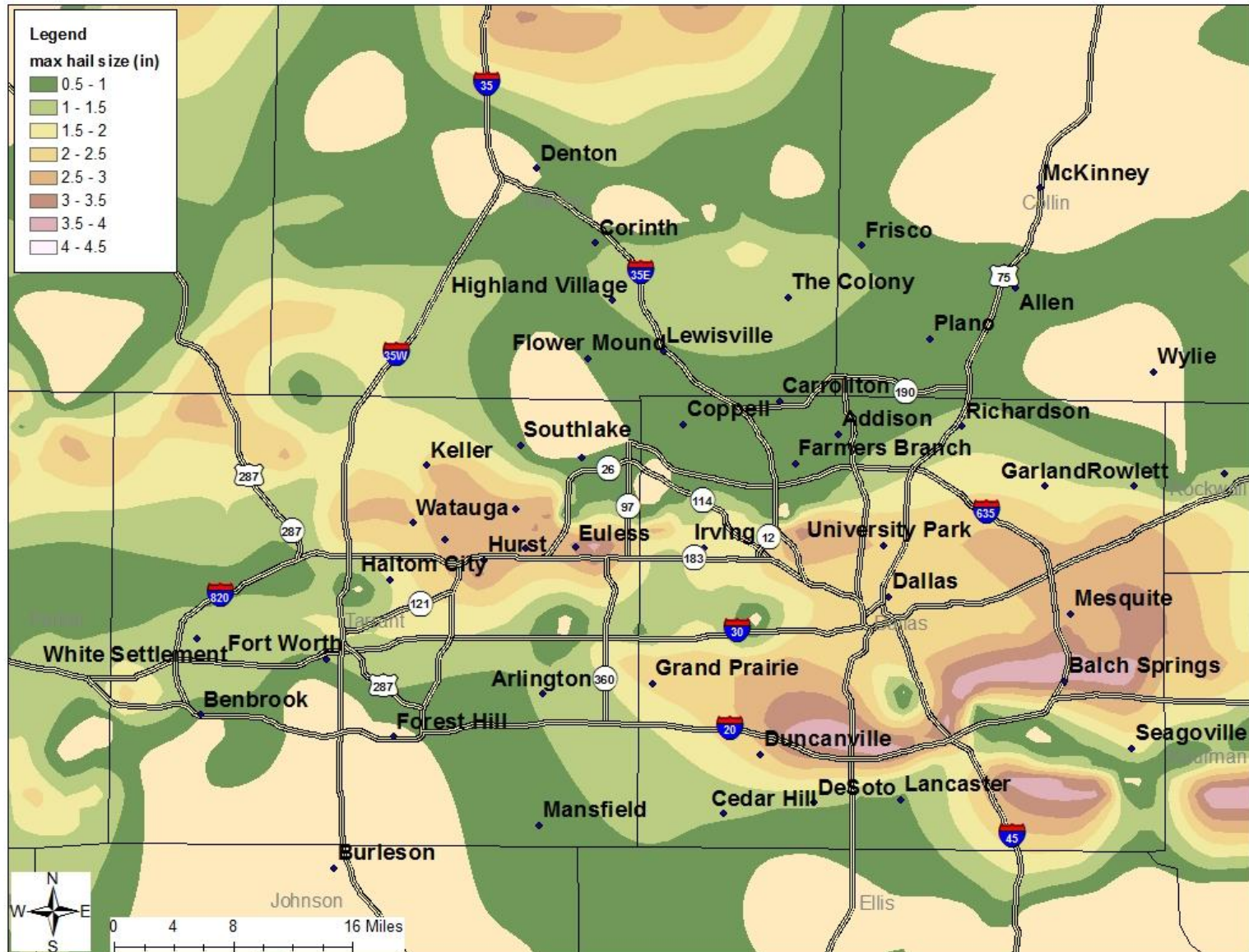
# **IBHS Claims Study: 2011 Dallas-Fort Worth Hailstorm**

- **May 24**
- **Reported hail size up to 5" diameter**
- **Closed insurance claims study comparing:**
  - **Roofing: Impact-rated vs. Non-impact rated**
  - **Aging**
  - **Relative difference in roofing damage vs. walls/windows/doors/trim damage**
  - **Radar estimated hail severity vs. severity seen in RICOWI field study**
- **More than 57,000 policies in force**
- **More than 6,000 claims**





# IBHS Claims Study: 2011 Dallas-Fort Worth Hailstorm



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# IBHS Claims Study: 2011 Dallas-Fort Worth Hailstorm



Results Coming Soon!!!

